

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3-4, 6-18, 21-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Lurie 20040058305.

Re claim 1, Lurie teaches a device for analyzing manual thumps applied to simulate pre-cordial thumps for the treatment of a dysrhythmia of the heart of a patient comprising a sensor arrangement arranged to detect parameters of a said manual thump (see figure 1, paragraph 0008 lines 1-7).

Re claim 3, Lurie teaches the sensor arrangement comprises at least one sensor which produces an output signal representative of the force applied to the sensor (see figure 1, paragraphs 0008 and 0011).

Re claim 4, Lurie teaches the output of sensor arrangement is proportional to the mechanical input (see figure 1, paragraphs 0008 and 0013).

Re claim 6, Lurie teaches the sensor arrangement comprises at least one sensor which comprising a support and a member for receiving an applied force mounted for movement relative to the support with a resilient arrangement having a preselected

spring constant coupled between the member and the support (see figure 1, paragraphs 0008 and 0014-15), and an optical sensor arranged to detect the displacement of the member relative to the support (see figure 1, paragraphs 0071-0072).

Re claim 7, Lurie teaches the optical sensor is fixed to one of the support and the member, an optical grating being fixed to the other of the support and the member positioned to be analyzed by the optical sensor to detect the displacement of the member relative to the support (see figure 1, paragraphs 0008 and 0013-0015).

Re claim 8, Lurie teaches a speed detector arrangement for detecting the pre-impact speed of the fist (paragraphs 0041-0043).

Re claim 9, Lurie teaches speed detector arrangement comprising at least two, spaced apart optical transmitter/receiver pairs for detecting passage of the fist (paragraphs 0019, 0045-0046).

Re claim 10, Lurie teaches the device has, in the target region for manual thumps, mechanical properties selected to simulate the precordial region of the chest of a patient (paragraphs 0057-0058).

Re claim 11, Lurie teaches a flexible sheet covering the sensor arrangement and having a resilience selected to simulate the precordial region of the chest of a patient (paragraphs 0008-0009).

Re claim 12, Lurie teaches analysis means for analyzing the detected parameters according to predetermined criteria to classify the effectiveness of a manual thump (paragraphs 0020 and 0051).

Re claim 13, Lurie teaches indicator means for outputting at least one of a visible or an audible indication of the detected parameters (paragraphs 0016-0018).

Re claim 14, Lurie teaches the sensor arrangement comprising an array of sensors (paragraphs 0072-0075).

Re claim 15, Lurie teaches the array is a regular array (paragraphs 0008-0014).

Re claim 16, Lurie teaches each sensor is covered by a rigid cap for transmitting applied force to the respective sensor (paragraphs 0052 and 0060).

Re claim 17, Lurie teaches an electronic circuit for receiving the output signal of each sensor (paragraphs 0042, 0078-0079).

Re claim 18, Lurie teaches the electronic circuit comprises at least one analog-to-digital converter arranged to convert the output signals of the sensors into a digital signal (paragraph 0078 lines 1-14).

Re claim 21, Lurie teaches the device has an output port for transferring the output signals of the sensor arrangement (paragraphs 0014, 0047, 0075 and 0078).

Re claim 22, Lurie teaches a computer system arranged to receive the output signals of the sensor arrangement having a computer program executable to process the output signals of the sensor arrangement (paragraphs 0020, 0040 and 0047).

Re claim 23, Lurie teaches the computer program capable of deriving the work performed during the manual thump (paragraphs 0020, 0040 and 0047).

Re claim 24, Lurie teaches the computer program is capable of producing a graphical representation of the output signals of the sensors (paragraph 0075 lines 1-32).

Re claim 25, Lurie teaches the computer program is capable of producing a graphical representation of any one or all of: the respective output signal of respective sensors over time, combination of the output signals of all the sensors over time, and the output signals of the sensors in their relative positions (paragraph 0075 lines 1-32).

Re claim 26, Lurie teaches a method of analysing a manual thump applied to stimulate a pre-cordial thump for the treatment of a dysrhythmia of the heart of a patient, comprising applying the manual thump to a device (paragraphs 0020 and 0051).

Re claim 27, Lurie teaches a force-detecting sensor comprising a support and a member for receiving an applied force mounted for movement relative to the support with a resilient arrangement having a preselected spring constant coupled between the member and the support (see figure 1, paragraphs 0008 and 0014-15), and an optical sensor for detecting the displacement of the member relative to the support, the detected displacement being representative of the applied force (see figure 1, paragraphs 0071-0072).

Re claim 28, Lurie teaches the optical sensor is fixed to one of the support and the member, and an optical grating is fixed to the other of the support and the member in a position to be analyzed by the optical sensor to detect the displacement of the member relative to the support (see figure 1, paragraphs 0008 and 0013-0015).

Re claim 29, Lurie teaches a computer program executable by a computer system and capable, when so executed, of causing the computer system to process the output signals of an array of sensors arranged to detect an impact applied thereto (paragraphs 0020, 0040 and 0047).

Re claim 30, Lurie teaches the computer program is capable of causing the computer system to produce a graphical representation of the output signals of the sensors (paragraph 0075 lines 1-32).

Re claim 31, Lurie teaches the computer program is capable of causing the computer system to produce a graphical representation of any one or all of: the respective output signal of respective sensors over time, the combination of the output signals of all the sensors over time and the output signals of the sensors in their relative positions (paragraph 0075 lines 1-32).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lurie 20040058305.

Re claim 2, Lurie teaches the invention as discussed above. Furthermore, Lurie teaches the sensor arrangement comprises at least one sensor having a frequency response (paragraphs 0008-0010).

However, Lurie fails to teach sensor having a frequency response of at least 1 kHz. It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute any measurement of frequency response to Lurie's invention in

order to provide relevant and timely feedback for more effective training as taught by Lurie (paragraph 0007 lines 1-6). In addition, since the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. **In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)**

Re claim 5, Lurie teaches the invention as discussed above. Furthermore, Lurie teaches the sensor arrangement is arranged to detect parameters of a said manual thump having energy (paragraphs 0016, 0066 and 0075-0077).

However, Lurie fails to teach the manual thump having energy in the range from 1 J to 20 J. It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute any measurement of energy to Lurie's invention in order to provide relevant and timely feedback for more effective training as taught by Lurie (paragraph 0007 lines 1-6). In addition, since the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. **In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)**

5. Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lurie 20040058305 in view of Lampotang 5769641.

Re claim 19, Lurie teaches the invention as discussed above.

However, Lurie fails to teach the following limitations as taught by Lampotang: the electronic circuit comprising at least one multiplexer arranged to time-division

multiplex the output signals of a group of sensors before conversion by said at least one analog-to-digital converter (see figure 7, column 14 lines 17-20).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lurie's invention in view of Lampotang in order to provide an apparatus for synchronizing output devices related to a cardiac rhythm in real time in an integrated patient simulator as taught by Lampotang (column 6 lines 64-66).

Re claim 20, Lurie teaches the invention as discussed above.

However, Lurie fails to teach the following limitations as taught by Lampotang: a plural number of multiplexers and analog-to-digital converters each arranged to convert the output of a respective multiplexer (see figure 7, column 14 lines 17-20).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lurie's invention in view of Lampotang in order to provide an apparatus for synchronizing output devices related to a cardiac rhythm in real time in an integrated patient simulator as taught by Lampotang (column 6 lines 64-66).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure as per the attached Notice of References Cited.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALVIN L. CARLOS whose telephone number is (571)270-3077. The examiner can normally be reached on 7:30am-5:00pm EST Mon-Fri (alternate Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xuan Thai can be reached on (571)272-7147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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